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(54) FILM FORMING METHOD

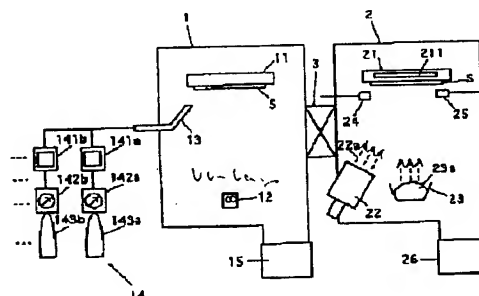
(57) Abstract:

PURPOSE: To stably form a film with good quality on a substrate by blowing oxygen gas on the substrate surface under vacuum while irradiating the surface with UV rays to clean the surface and then forming a film while irradiating the substrate surface with inert gas ions.

CONSTITUTION: A substrate S made of glass or the like on which a film is to be formed is mounted on a holder 11 in a vacuum chamber 1 equipped with an evacuating device 15, and the chamber is evacuated. Then O₂ gas or a mixture gas of O₂ gas and inert gas such as He and Ar is blown through a nozzle 13 on the surface of the substrate S, while UV rays from a lamp 12 is made to irradiate the surface of the substrate S to decompose the polluted water and org. matters such as oil films on the surface of the substrate S into CO₂, N₂, H₂O or the like and to vaporize and remove them. The cleaned substrate S is sent to the next vacuum chamber 2. In the chamber 2, the substrate is heated with a heater 211 under vacuum while irradiated with inert gas ions 22a from an ion source 22 so that the material 23a for vapor deposition in a vapor source 23 is heated and vaporized

to form a vapor deposition film without pin holes on the surface of the substrate S.

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Substrate S is made of glass or the like

UV-Vac. chamber

Transfer mechanism 24 is used to transfer the substrate S from chamber 1 to chamber 2